presetting, through use of a processor, a pre-selected pulse shape to be produced by the laser source, based on known properties of a target material to be processed on a workpiece;

selecting, through use of a processor, independently of the pre-selected pulse shape, a time interval between at least two successive transmissions of pulses onto the workpiece; and

pulsing the pulsed laser system, through use of a processor, by closing the switch for a fixed, predetermined period of time prior to each emission period regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to process the target material on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse shape remains as preset regardless of the time interval, without selection of the time interval affecting the pulse shape.

55. (Thrice amended) A method of operating a pulsed laser system comprising a laser source and a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period, the method comprising:

presetting, through use of a processor, a pre-selected time interval between at least two successive transmissions of pulses onto a workpiece, based on known properties of a target material to be processed on the workpiece;

selecting, through use of a processor, independently of the pre-selected time interval, a pulse shape to be produced by the laser source; and

pulsing the pulsed laser system, through use of a processor, with the pulse shape selected independently of the pre-selected time interval, by closing the switch for a period of time prior to each emission period that is fixed and predetermined for the selected pulse shape regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to process the target material on the workpiece, while the pre-selected time interval remains as preset

regardless of the pulse shape, without selection of the pulse shape affecting the time interval.

86. (Amended) A method of operating a pulsed laser system comprising a laser source continuously pumped at constant power, the method comprising:

presetting, through use of a processor, a pre-selected pulse shape to be produced by the laser source, based on known properties of a target material to be processed on a workpiece;

selecting, through use of a processor, independently of the pre-selected pulse shape, a time interval between at least two successive transmissions of pulses onto the workpiece; and

pulsing the pulsed laser system, through use of a processor, while the laser source is continuously pumped at constant power, to cause the laser source to process the target material on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse shape remains as preset regardless of the time interval, without selection of the time interval affecting the pulse shape.

87. (Amended) A method of operating a pulsed laser system comprising a laser source continuously pumped at constant power, the method comprising:

presetting, through use of a processor, a pre-selected time interval between at least two successive transmissions of pulses onto a workpiece, based on known properties of a target material to be processed on the workpiece;

selecting, through use of a processor, independently of the pre-selected time interval, a pulse shape to be produced by the laser source; and

pulsing the pulsed laser system, through use of a processor, while the laser source is continuously pumped at constant power, with the pulse shape selected independently of the pre-selected time interval, to cause the laser source to process the target material on the workpiece, while the pre-selected time interval remains as preset regardless of the

pulse shape, without selection of the pulse shape affecting the time interval. affecting the pulse energy characteristic.

88. (Amended) A method of operating a pulsed laser system comprising a laser source and a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period, the method comprising:

presetting, through use of a processor, a pre-selected pulse energy characteristic to be produced by the laser source, based on known properties of a trimmable component to be micro-machined on a workpiece;

dynamically selecting, through use of a processor, independently of the pre-selected pulse energy characteristic, during trimming of the trimmable component, a time interval between at least two successive transmissions of pulses onto the workpiece, so as to permit the trimmable component to be measured accurately during trimming of the trimmable component; and

pulsing the pulsed laser system, through use of a processor, by closing the switch for a fixed, predetermined period of time prior to each emission period regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to micro-machine the trimmable component on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse energy characteristic remains as preset regardless of the time interval, without selection of the time interval affecting the pulse energy characteristic. –

Please add claims 94-111.

94. A pulsed laser system comprising:

a laser pump;

a laser rod;

a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod;

an output reflector through which energy is emitted from the laser rod;

a switch interposed between the laser rod and the output reflector configured to be closed to cause energy to be stored in the laser rod for a desired period of time, and to be opened to allow energy to be emitted from the laser rod during an emission period; and

a processor programmed to allow presetting of a pre-selected pulse shape to be produced by the laser source, based on known properties of a target material to be processed on a workpiece, to allow settting, independently of the pre-selected pulse shape, of a time interval between at least two successive transmissions of pulses onto the workpiece, and to cause the pulsed laser system to be pulsed, by causing the switch to be closed for a fixed, predetermined period of time prior to each emission period regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to process the target material on the workpiece, with the set time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse shape remains as preset regardless of the time interval, without setting of the time interval affecting the pulse shape.

95. A pulsed laser system comprising:

a laser pump;

a laser rod;

a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod;

an output reflector through which energy is emitted from the laser rod;

a switch interposed between the laser rod and the output reflector configured to be closed to cause energy to be stored in the laser rod for a desired period of time, and to be opened to allow energy to be emitted from the laser rod during an emission period; and

a processor programmed to allow presetting of a pre-selected time interval between at least two successive transmissions of pulses onto a workpiece, based on known properties of a target material to be processed on a workpiece, to allow setting, independently of the pre-

selected time interval, of a pulse shape to be produced by the laser source, and to cause the pulsed laser system to be pulsed, with the pulse shape set independently of the pre-selected time interval, by causing the switch to be closed for a period of time prior to each emission period that is fixed and predetermined for the set pulse shape regardless of the time interval between the at least two successive transmissions of pulses onto the workpiece, so as to cause the laser source to process the target material on the workpiece, while the pre-selected time interval remains as preset regardless of the pulse shape, without setting of the pulse shape affecting the time interval.

D5 Cont'd

96. A pulsed laser system comprising:

a laser pump that is operatable continuously at constant power;

a laser rod;

a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod;

an output reflector through which energy is emitted from the laser rod;

a switch interposed between the laser rod and the output reflector configured to be closed to cause energy to be stored in the laser rod for a desired period of time, and to be opened to allow energy to be emitted from the laser rod during an emission period; and

a processor programmed to allow presetting of a pre-selected pulse shape to be produced by the laser source, based on known properties of a target material to be processed on a workpiece, to allow setting, independently of the pre-selected pulse shape, of a time interval between at least two successive transmissions of pulses onto the workpiece, and to cause the pulsed laser system to be pulsed, while the laser source is continuously pumped at constant power, so as to cause the laser source to process the target material on the workpiece, with the set time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse shape remains as preset regardless of the time interval, without setting of the time interval affecting the pulse shape.

97. A pulsed laser system comprising:

a laser pump that is operatable continuously at constant power;

a laser rod;

a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod;

an output reflector through which energy is emitted from the laser rod;

a switch interposed between the laser rod and the output reflector configured to be closed to cause energy to be stored in the laser rod for a desired period of time, and to be opened to allow energy to be emitted from the laser rod during an emission period; and

a processor programmed to allow presetting of a pre-selected time interval between at least two successive transmissions of pulses onto a workpiece, based on known properties of a target material to be processed on a workpiece, to allow setting, independently of the pre-selected time interval, of a pulse shape to be produced by the laser source, and to cause the pulsed laser system to be pulsed, while the laser source is continuously pumped at constant power, with the pulse shape set independently of the pre-selected time interval, so as to cause the laser source to process the target material on the workpiece, while the pre-selected time interval remains as preset regardless of the pulse shape, without setting of the pulse shape affecting the time interval.

98. A method of operating a pulsed laser system comprising a laser source and having programmable pulse energy characteristics, the method comprising:

presetting, through use of a processor, a pre-selected pulse energy characteristic to be produced by the laser source, based on known properties of a trimmable component to be micro-machined on a workpiece;

dynamically selecting, through use of a processor, independently of the pre-selected pulse energy characteristic, during trimming of the trimmable component, a time interval between at least two successive transmissions of pulses onto the workpiece, so as to permit the trimmable component to be measured accurately during trimming of the trimmable component; and

pulsing the pulsed laser system, through use of a processor, so as to cause the laser source to micro-machine the trimmable component on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse energy characteristic remains as preset regardless of the time interval, without selection of the time interval affecting the pulse energy characteristic.

99. The method of claim 98 wherein the the trimmable component is a resistor and the pulse energy is about 200-300 microjoules.

100. The method of claim 99 wherein resistor comprises a low ohm material and the pulse energy is about 300 microjoules.

101. The method of claim 98 wherein the selected time interval between two successive transmission of pulses to the trimmable component is in a range of about 1 millisecond (1 kilohertz) during measurement and about 20 microseconds (50 kilohertz) during high-speed trimming prior to measurement.

102. The method of claim 98 wherein the energy characteristic is a pulse width of about 125 nanoseconds.

103. The method of claim 98 wherein the energy characteristic is a pulse width in the range of about 70 nanoseconds to 125 nanoseconds.

104. The method of claim 98 wherein the energy characteristic is a pulse width long enough that trimmable component is cut through to the bottom of the trimmable component while substantial lateral heat conduction is avoided, whereby microcracking is avoided.

105. The method of claim 98 wherein the laser source is a continuously pumped laser source and wherein the laser system comprises a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period.

106. The method of claim 98 wherein the laser source is diode pumped.

107. A pulsed laser system having programmable pulse energy characteristics, comprising:

a laser pump;

a laser rod;

a reflector interposed between the laser pump and the laser rod, through which energy from the laser pump enters the laser rod;

an output reflector through which energy is emitted from the laser rod;

a switch interposed between the laser rod and the output reflector configured to be closed to cause energy to be stored in the laser rod for a desired period of time, and to be opened to allow energy to be emitted from the laser rod during an emission period; and

a processor programmed to allow presetting of a pre-selected pulse energy characteristic to be produced by the laser source, based on known properties of a trimmable component to be micro-machined on a workpiece, to allow dynamic selecting, independently of the pre-selected pulse energy characteristic, during trimming of the trimmable component, of a time interval between at least two successive transmissions of pulses onto the workpiece, so as to permit the trimmable component to be measured accurately during trimming of the trimmable component, and to cause the pulsed laser system to be pulsed, so as to cause the laser source to micro-machine the trimmable component on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse energy characteristic remains as preset regardless of the time interval, without selection of the time interval affecting the pulse energy characteristic.

108. The pulsed laser system of claim 107 wherein the laser source is a continuously pumped laser source and wherein the laser system comprises a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period.

109. A trimmed component micromachined in accordance with a method of operating a pulsed laser system comprising a laser source and having programmable pulse energy characteristics, the method comprising:

presetting, through use of a processor, a pre-selected pulse energy characteristic to be produced by the laser source, based on known properties of a trimmable component to be micro-machined on a workpiece;

D5 Cont'd

dynamically selecting, through use of a processor, independently of the pre-selected pulse energy characteristic, during trimming of the trimmable component, a time interval between at least two successive transmissions of pulses onto the workpiece, so as to permit the trimmable component to be measured accurately during trimming of the trimmable component; and

pulsing the pulsed laser system, through use of a processor, so as to cause the laser source to micro-machine the trimmable component on the workpiece, with the selected time interval between the at least two successive transmissions of pulses onto the workpiece, while the pre-selected pulse energy characteristic remains as preset regardless of the time interval, without selection of the time interval affecting the pulse energy characteristic.

110. The trimmed component of claim 109 wherein in the method of operating the pulsed laser system the energy characteristic is a pulse width long enough that the trimmable component is cut through to the bottom of the trimmable component while substantial lateral heat conduction is avoided, whereby microcracking is avoided.

111. The trimmed component of claim 109 wherein in the method of operating the pulsed laser system the laser source is a continuously pumped laser source and wherein the laser system comprises a switch configured to be closed to cause energy to be stored by the laser source for a desired period of time, and to be opened to allow energy to be emitted from the laser source during an emission period.

In the drawings:

Please substitute the enclosed sheet of drawings, containing amended FIGS. 1 and 2, for the corresponding sheet filed with the patent application. Changes to FIGS. 1 and 2 have been circled in red ink. In particular, computer 11, referenced in the detailed description as filed at page 13, lines 8-12, has been added to FIGS. 1 and 2. No new matter has been added, as support for the changes is found in the detailed description as filed at page 13, lines 8-12.